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(56) Documents Cited

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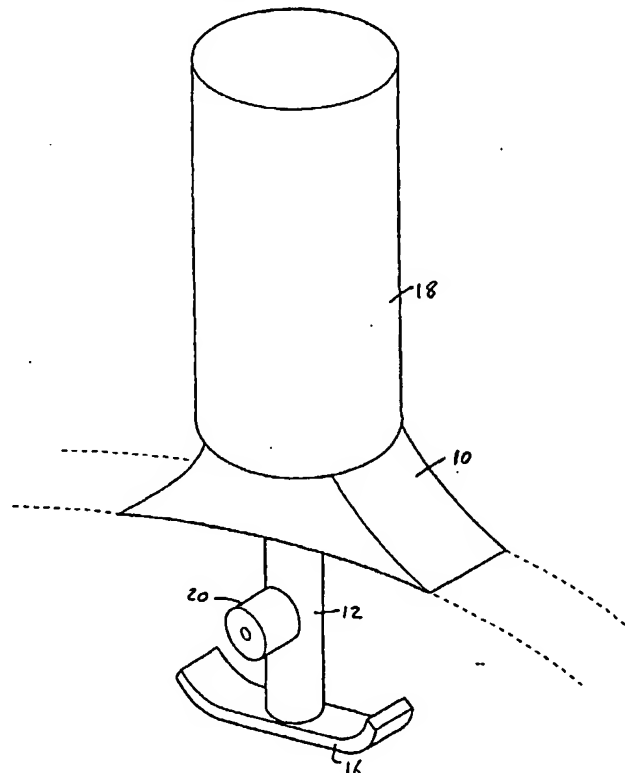
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(54) Abstract Title

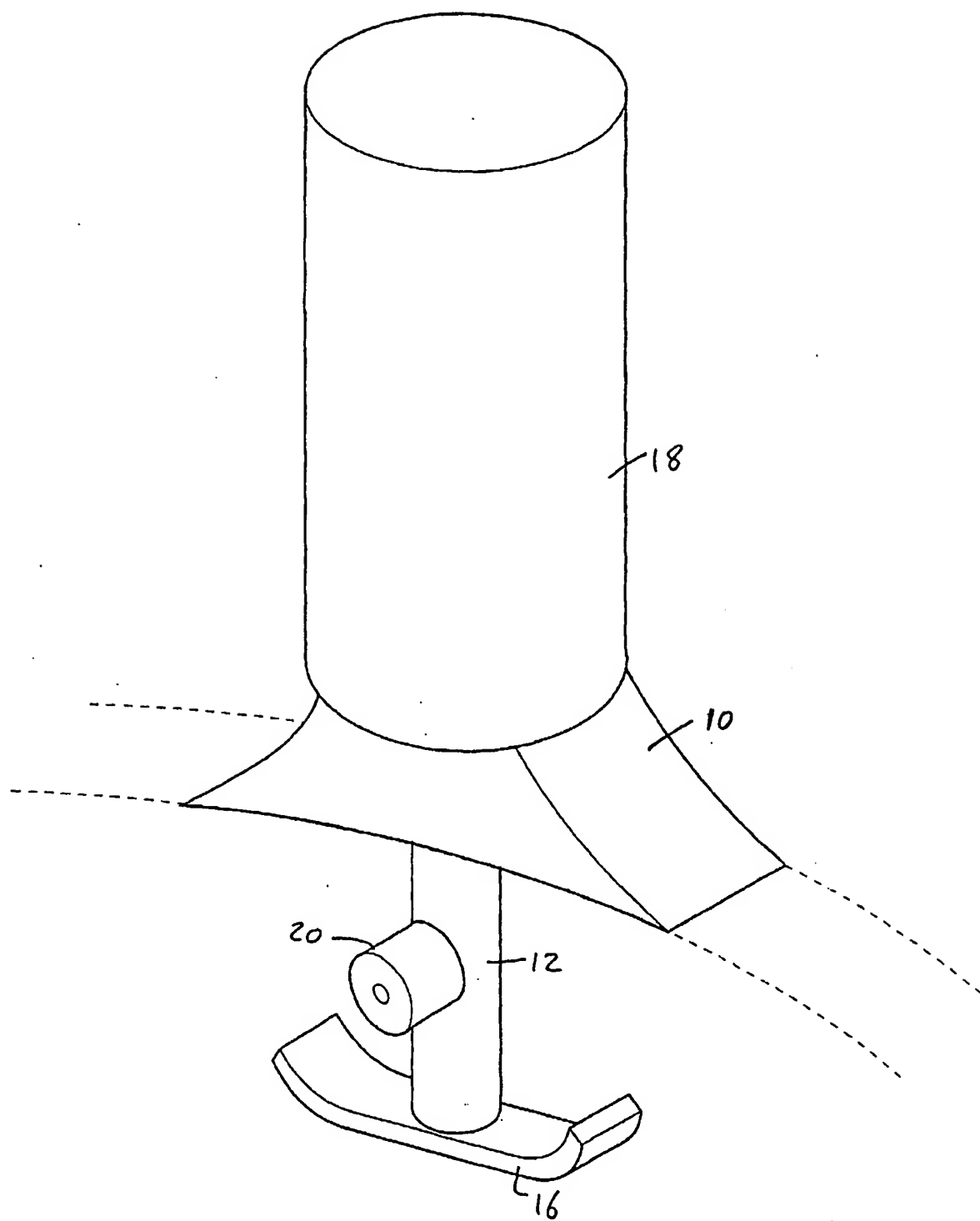
Tyre tread marking device

(57) The device, for use in indicating the tread depth wear of a vehicle tyre, comprises a probe (12) for inserting into a channel of a tyre tread to rest against the bottom of the channel, and a marking head (20) directed from a side of the probe, for marking a side of the tyre tread channel. The probe is spring biased outwardly of a body (10) having a curved surface for sliding over the tread outer surface, an ink cartridge (18) for feeding the head (20) extending from the body.

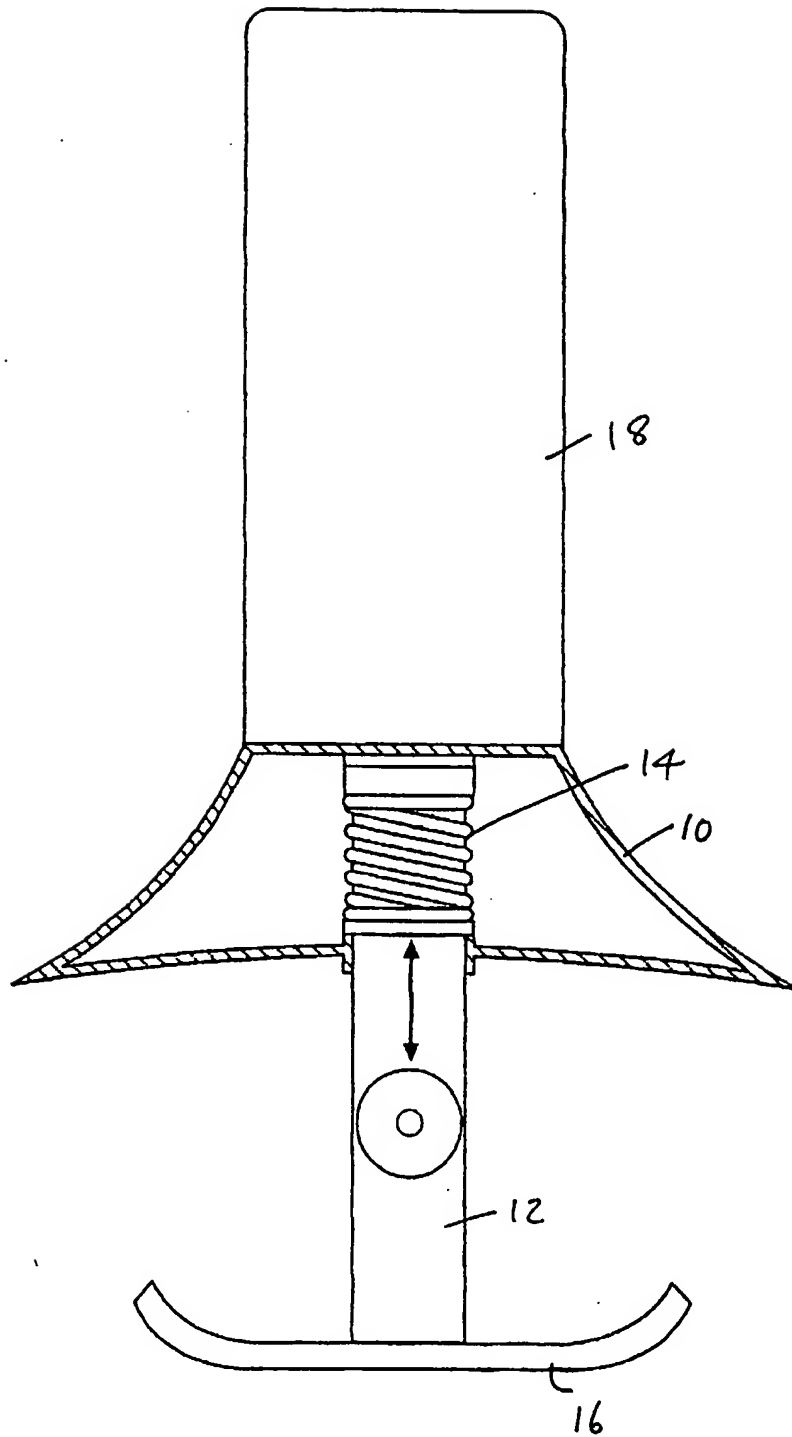


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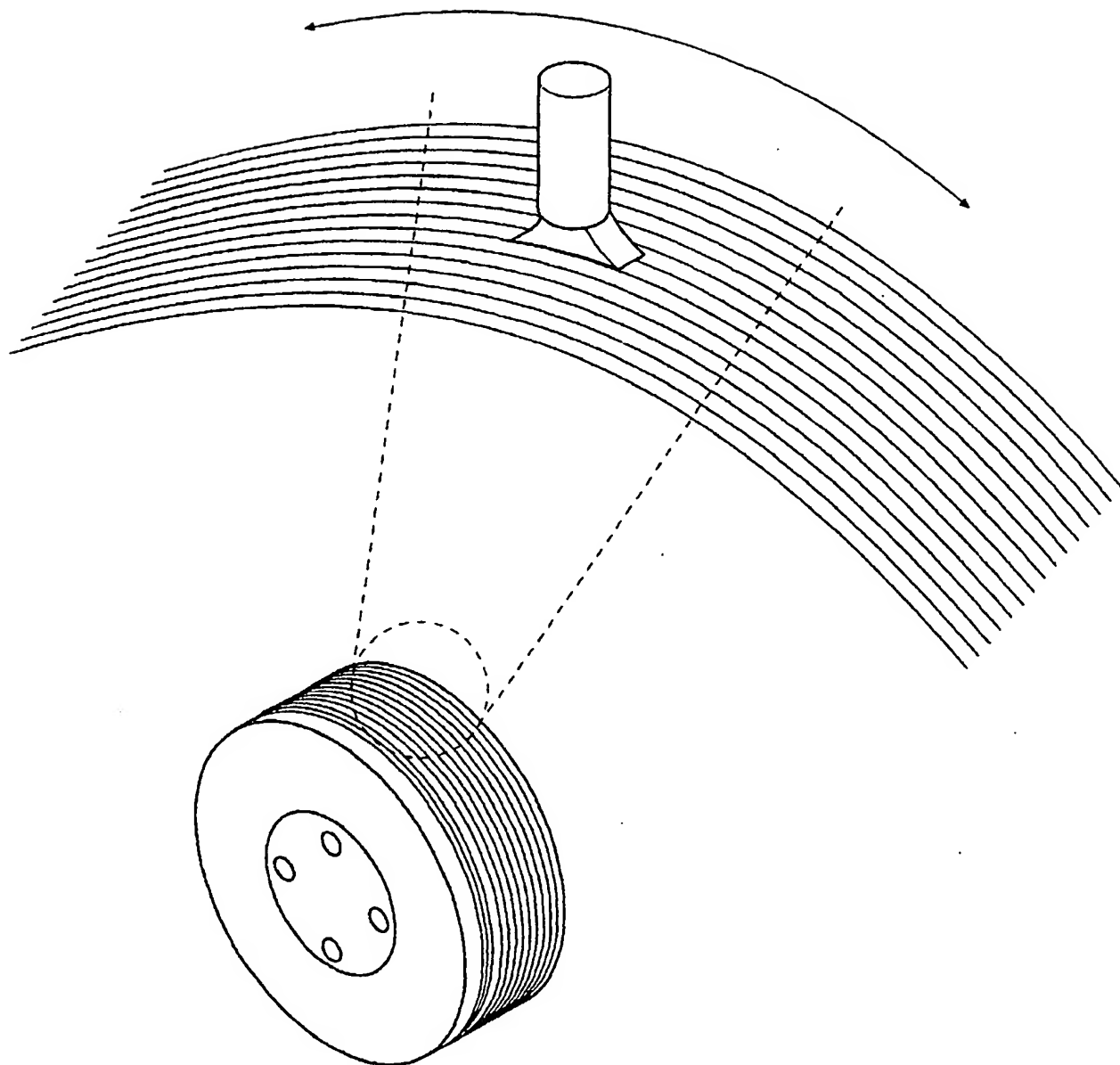
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INDICATING TYRE TREAD DEPTH WEAR

The present invention relates to a device for use in indicating the tread depth wear of motor vehicle tyres.

A number of systems have been proposed hitherto for indicating the tread depth wear of a tyre. These are generally
5 difficult or ineffective in use.

I have now devised a device which is of simple construction and easy to use, yet provides an effective indication of tread depth wear.

In accordance with the present invention, there is
10 provided a marking device which comprises a probe for inserting into a channel of a tyre tread to rest against the bottom surface of the tyre tread channel, and a marking head directed from a side of the probe, for marking a side of the tyre tread channel.

15 In use, the probe of the device is inserted into a selected tyre tread channel to rest against the bottom surface of the channel, then the device is moved along the tyre tread channel to mark the side of the channel.

The mark need only be made along a short length of the
20 channel, perhaps an inch or so. Any desired number of the tyre tread channels, across the width of the tyre, may be similarly marked.

It will be appreciated that the mark will be made at a predetermined distance from the bottom of the tyre tread
25 channel or channels. The vehicle user is able to inspect his tyres at intervals of time, to check that the tyre has not been worn down to below the mark: he is also able to check for uneven wear across the width of the tyre.

Preferably the probe of the device comprises a stem
30 projecting from a body part of the device. Preferably a guide shoe is mounted to the outer end of the stem. Preferably the guide shoe is elongated to extend along the tyre tread channel. Preferably the stem is depressable relative to the body of the device, against a spring bias. Preferably the underside of the

body of the device is concave-curved, to conform to the outer surface of the tyre tread.

Preferably the marking head comprises an inking head, preferably an ink spraying head. Preferably an ink cartridge
5 is mounted to the body of the device and preferably provides a grip for the device.

An embodiment of the present invention will now be described by way of example only and with reference to the accompanying drawings, in which:

10 FIGURE 1 is a view of a tyre tread marking device in accordance with the invention;

FIGURE 2 is a side view, partly in section, of the device of Figure 1; and

FIGURE 3 is a view showing use of the device on a tyre
15 tread.

Referring to Figures 1 and 2 of the drawings, there is shown a tyre tread marking device which comprises a body 10 from which a stem 12 projects: the stem 12 is mounted for axial sliding movement relative to the body 10 and is biased
20 outwardly by a spring 14. The outer end of the stem 12 has a guide shoe 16 mounted to it: the guide shoe 16 comprises an elongate plate having its opposite ends curved partially upwardly towards the body 10. The body 10 is elongated parallel to the guide shoe 16 and its underside is slightly
25 concave-curved, along the length of the body, for conforming to the outer surface of the tyre when the stem 12 and guide shoe 16 are inserted into a channel of the tyre tread.

A cylindrical ink cartridge 18 is mounted to the top of the body 10 and is axially aligned with the stem 12. An ink-
30 spraying tip 20 is mounted to the stem 12 to project from one side of the device: the spraying tip 20 is fed from the cartridge 18 via an outlet passage extending through the stem 12.

Referring to Figure 3, the device is used to mark a
35 line along the inner side of a channel of the tyre tread. The

device is gripped by its ink cartridge 18: the guide shoe 16 is aligned along the length of the selected tyre tread channel and inserted into that channel until its guide shoe rests against the bottom of the channel and its spraying tip is
5 directed towards the adjacent side of the channel. The cartridge is pushed inwardly to bring the underside of the body 10 into contact with the outer surface of the tyre tread, the body 10 moving axially relative to the stem against the bias of the spring 14, and causing ink to be sprayed from the tip
10 20 onto the adjacent side of the tyre tread channel: the user now slides the device along the channel, so marking a line along the side of the channel, a constant distance from the bottom of the channel.

The line need only be marked for a short distance,
15 perhaps only one inch, along the side of the channel. The user may similarly mark any desired number of the tyre tread channels, across the width of the tyre.

It will be appreciated that the device which has been described is of simple construction and easy to use, yet is
20 effective in enabling the vehicle user to monitor the wear of his tyre treads.

Claims

- 1) A marking device which comprises a probe for inserting into a channel of a tyre tread to rest against the bottom of the tyre tread channel, and a marking head directed from a side of the probe, for marking a side of the tyre tread channel.
5
- 2) A marking device as claimed in claim 1, in which said probe comprises a stem projecting from a body part of the device.
- 3) A marking device as claimed in claim 2, comprising a guide shoe mounted to the other end of said stem.
10
- 4) A marking device as claimed in claim 3, in which said guide shoe is elongated to extend, in use of the device, along the tyre tread channel.
- 5) A marking device as claimed in any one of claims 2 to 4, in which said stem is depressible against spring bias, relative to said body part of the device.
15
- 6) A marking device as claimed in any one of claims 2 to 5, in which said body part is formed with a concave underside, for conforming to the outer surface of the tyre tread.
- 7) A marking device as claimed in any preceding claim, in which said marking head comprises an ink spraying head.
20
- 8) A marking device as claimed in claim 7, comprising an ink cartridge mounted to provide a grip for the device.
- 9) A marking device substantially as herein described with reference to the accompanying drawings.
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INVESTOR IN PEOPLE

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Claims searched: 1-9

Examiner: Roger Binding
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Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

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Int Cl (Ed.7): B60C 11/24; B25H 7/00, 7/04

Other: Online WPI EPODOC JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	GB 2011807 A (DUNLOP)	
A	GB 0532142 A (BRITISH THOMSON HOUSTON), see Fig 3, page 2, lines 47 to 101 and page 3, lines 113 to 126.	
A	EP 0801207 A2 (HILTI)	

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.

& Member of the same patent family

A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.